

# *Hawley's Condensed Chemical Dictionary*

*ELEVENTH EDITION*

*Revised by*

N. Irving Sax

and

Richard J. Lewis, Sr.

Best Available Copy



VAN NOSTRAND REINHOLD COMPANY  
New York

al chemistry, drugs, textiles, foam rubbers, vinyl

2. See ammonium bicarbonate.

See ammonium bifluoride.

carbonate.

A "post-emergent herbicide" 157, a clear solution

ite. See ammonium phosphate.

ammonium polymannuronate. A hydrophilic, colorless

is, grainy, granular or powdery, slightly yellow, and may have a faint smell and taste. Slowly dissolves in water to form a viscous solution. Insoluble in alcohol.

Use: As a stabilizer in food products.

See aluminum ammonium sulfate.

chloride. See aluminum chloride.

CAS: 7784-44-3.

Crystals or powder efflorescing in ammonia, d 1.99. Soluble in water; insoluble in hot water.

carboxylate.  $(\text{H}_2\text{N})_2(\text{C}_6\text{H}_3(\text{O})\text{COONH}_4)_2$ . Mixes with aluminum, chromium, and nickel.

sulfonate. (ammonium sulfonate).  $\text{NH}_4\text{NH}_2$ .

1C (decomposes), d 1.34. Insoluble in kerosene.

ite.  $\text{C}_6\text{H}_5\text{COONH}_4$ . Crystals or powder. Soluble in water and glycerol. Decomposes at 160°C. Used as a preservative.

ammonium baborate. See ammonium borate.

ammonium bicarbonate. (ammonium acid carbonate; ammonium hydrogen carbonate). CAS: 1066-33-7.  $\text{NH}_4\text{HCO}_3$ .

Properties: White crystals. Soluble in water, insoluble in alcohol. D 1.586, mp decomposes at 36 to 60°C. Noncombustible.

Derivation: By heating ammonium hydroxide with an excess of carbon dioxide and evaporating. Impurities: Ammonium carbonate.

Grade: Technical, CP, FCC.

Hazard: Evolves irritating fumes on heating to 35°C.

Use: Production of ammonium salts, dyes, leavening agent for cookies, crackers, cream-puff doughs, fire-extinguishing compounds, pharmaceuticals, degreasing textiles, blowing agent for foam rubber, boiler scale removal, compost treatment.

ammonium bichromate. See ammonium dichromate.

ammonium bifluoride. (ammonium acid fluoride; ammonium hydrogen fluoride).

CAS: 1341-49-7.  $\text{NH}_4\text{HF}_2$ .

Properties: White crystals, deliquescent, d 1.211, soluble in water and alcohol.

Derivation: Action of ammonium hydroxide on hydrofluoric acid with subsequent crystallization.

Hazard: Corrosive to skin. TLV (as F): 2.5 mg/m<sup>3</sup> of air.

Use: Ceramics, chemical reagent, etching glass (white acid), sterilizer for brewery, dairy and other equipment; electroplating processing beryllium, laundry sour.

ammonium binoxalate.  $(\text{NH}_4)\text{HC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ .

Properties: Colorless crystals. Soluble in water. D 1.556, decomposes on heating.

Derivation: Action of ammonium hydroxide on oxalic acid with subsequent crystallization.

Use: Analytical reagent, ink removal from fabrics.

ammonium biphosphate. See ammonium phosphate, monobasic.

ammonium bisulfate. (acid ammonium sulfate; ammonium hydrogen sulfate).  $\text{NH}_4\text{HSO}_4$ .

Properties: Colorless, deliquescent powder; mp 145°C; d 1.79; soluble in water; insoluble in acetone and alcohol.

Use: Catalyst in organic synthesis, hair wave formulation.

ammonium bisulfide. See ammonium sulfide.

ammonium bitartrate. (acid ammonium tartrate).  $(\text{NH}_4)\text{HC}_4\text{H}_4\text{O}_6$ .

Properties: White crystals; soluble in water, acids, and alkalis; insoluble in alcohol; d 1.636.

Derivation: By the action of ammonium hydroxide on tartaric acid.

Use: Baking powder.

ammonium borate. (ammonium baborate).

$\text{NH}_4\text{HB}_4\text{O}_7 \cdot 3\text{H}_2\text{O}$ .

Properties: Colorless crystals, efflorescent with loss of ammonia. Soluble in water. D 2.38–2.95. Noncombustible.

Derivation: Action of ammonium hydroxide on boric acid with subsequent crystallization.

Hazard: Evolves irritating fumes especially when heated.

Use: Fireproofing compounds, electrical condensers, herbicide.

ammonium bromide.  $\text{NH}_4\text{Br}$ .

Properties: Colorless crystals or yellowish white powder, soluble in water and alcohol, somewhat hygroscopic. D 2.43, mp sublimates. Noncombustible.

Derivation: Action of hydrobromic acid on ammonium hydroxide with subsequent crystallization.

Grade: Technical, pure, CP, NF.

Use: Precipitating silver salts for photographic plates, medicine (for its bromide ion), analytical chemistry, process engraving, textile finishing, fire retardant, anticorrosive agents.

ammonium cadmium bromide. See cadmium ammonium bromide.

ammonium caprylate. (octanoic acid ammonium salt).  $\text{C}_8\text{H}_{17}\text{NO}_2$ .

Properties: Hygroscopic crystals, decompose at room temperature, mp approximately 75°C. Hydrolyzes readily. Soluble in alcohol and glacial acetic acid, partly soluble in acetone, insoluble in benzene.

Use: Pesticide, photographic emulsions, chemical intermediate.

ammonium carbamate.  $\text{NH}_4\text{CO}_2\text{NH}_2$ .

Properties: White, rhombic, crystalline powder; very volatile; forms urea upon heating; soluble in water and alcohol. Sublimes at 60°C, decomposes in air to evolve ammonia.

Derivation: Interaction of dry ammonia gas and carbon dioxide from ammonia liquor with ammonia and ammonium carbonate.

Grade: Technical.

Hazard: Evolves irritating fumes when heated.

Use: Fertilizer.

ammonium carbazotate. See ammonium picrate.

Best Available Copy

ire, pure fused, CP, NF reagent.  
hydrating agent, textile conditioner, reagent,  
analytical chemistry, medicine, cacodylic  
es, crystal glass, synthetic flavors.

acid carbonate. See potassium bicarbonate.

acid fluoride. See potassium bifluoride.

acid oxalate. See potassium binoxalate.

acid phosphate. See potassium phosphonobasic.

acid saccharate.  
CHOH), COOK.

s: Light off-white powder, pH of solution  
htly soluble in cold water; soluble in hot  
cid, or alkaline solutions. Combustible.  
lating agent, rubber formulations, metal  
soaps and detergents.

acid sulfate. See potassium bisulfate.

acid sulfate, anhydrous. See potassium  
ate.

acid sulfite. See potassium bisulfite.

acid tartrate. See potassium bitartrate.

alginate. (potassium polymannuro-  
( $C_6H_7O_6K$ )<sub>n</sub>). Hydrophilic colloid  
a molecular weight of 32,000–250,000.  
s: Occurs in filamentous, grainy, granu-  
powdered forms. It is colorless or slightly  
e. Slowly soluble in water forming a vis-  
lution; insoluble in alcohol.  
technical, FCC.

thickening agent and stabilizer in dairy prod-  
ucts, canned fruits, and sausage casings; emulsi-

alginic acid.

alum. See aluminum potassium sulfate.

aluminate. CAS: 12003-63-3.  
)<sub>4</sub>·3HOH.

es: Hard crystals, lustrous, soluble in water.  
hydrolysis to form strongly alkaline solu-  
tion; soluble in alcohol.

on: By fusing potassium hydroxide with alu-  
minum oxide.  
technical.

ing, printing (mordant); lakes, paper

aluminosilicate. See feldspar.

potassium aluminum fluoride.  $K_3AlF_6$ .

Properties: White powder, slightly soluble in wa-  
ter.

Derivation: Aluminum fluoride, ammonium fluo-  
ride, and potassium chloride.

Hazard: Toxic by ingestion and inhalation, strong  
irritant. TLV (as fluorine): 2.5 mg/m<sup>3</sup> of air.

Use: Insecticide.

potassium aluminum sulfate. See aluminum po-  
tassium sulfate.

potassium-p-aminobenzoate. CAS: 138-84-1.  
 $C_7H_6KNO_2$ .

Properties: Colorless crystals, soluble in water,  
partially soluble in alcohol, insoluble in ether.

Use: Condensation catalyst, mainly for polyglycol  
ether polymers.

potassium antimonyl tartrate. See antimony po-  
tassium tartrate.

potassium argentocyanide. See silver potassium  
cyanide.

potassium arsenate. (Macquer's salt).  
CAS: 7784-41-0.  $KH_2AsO_4$ .

Properties: Colorless crystals, d 2.867, mp 288C,  
soluble in water, insoluble in alcohol.

Hazard: Toxic by ingestion and inhalation, strong  
irritant.

Use: Manufacture of fly paper, insecticidal prepa-  
rations, preserving hides, printing textiles.

potassium arsenite. (potassium metaarsenite).  
CAS: 10124-50-2.  $KH(AsO_2)_2 \cdot HOH$ .

Properties: White powder, hygroscopic, decom-  
poses slowly in air, variable composition, keep  
well stoppered, soluble in water, slightly soluble  
in alcohol.

Grade: Technical, reagent.

Hazard: Toxic by ingestion and inhalation, strong  
irritant.

Use: Reducing agent in silvering mirrors.

potassium aurate.  $KAuO_2 \cdot 3HOH$ .

Properties: Yellow crystals, soluble in water and  
alcohol.

Derivation: Gold oxide dissolved in potassium hy-  
droxide solution.

Use: To prepare other gold compounds.

potassium beryllium fluoride. See beryllium po-  
tassium fluoride.

potassium bicarbonate. (potassium acid carbon-  
ate baking soda). CAS: 298-24-6.  
 $NaHCO_3$ .

Properties: Colorless, odorless, transparent crys-  
tals or white powder; slightly alkaline, salty taste.

Soluble in water and potassium carbonate solu-  
tion, insoluble in alcohol, d 2.17, mp decomposes  
between 100 and 120C, refr index 1.482.

Derivation: By passing carbon dioxide into a solu-  
tion of potassium carbonate in water.

Grade: Commercial, highest purity, USP, reagent,  
FCC.

Use: Baking powders, soft drinks, medicine (ant-  
acid), manufacture of pure potassium carbonate,  
fire-extinguishing agent, low pH liquid deter-  
gents, laboratory reagent, food additive.

potassium bichromate. See potassium dichro-  
mate.

potassium bifluoride. (potassium acid fluoride;  
potassium hydrogen fluoride).  
CAS: 7789-29-9.  $KHF_2$ .

Properties: Colorless crystals, decomposed by  
heat, soluble in alcohol (dilute) and water, insolu-  
ble in alcohol (absolute), d 2.37, mp 238C.

Grade: Technical.

Hazard: Corrosive to tissue. TLV (as F): 2.5 mg/  
m<sup>3</sup> of air.

Use: Etching glass, flux in silver solders, alkylation  
catalyst, electrolyte in fluorine production.

potassium binoxalate. (potassium acid oxalate;  
acid potassium oxalate; sorrel salt).

CAS: 127-95-7.  $KHC_2O_4 \cdot 1/2HOH$ .

Properties: White crystals; bitter, sharp taste;  
somewhat hygroscopic. Soluble in water, insolu-  
ble in alcohol, density of the anhydrous salt  
2.088, decomposes when heated.

Derivation: Neutral potassium oxalate and oxalic  
acid are dissolved in water and crystallized.

Hazard: Toxic by ingestion.

Use: Removing ink stains, scouring metals, clean-  
ing wood, photography, laboratory reagent, mor-  
dant.

potassium biphthalate. See potassium hydrogen  
phthalate.

potassium bisulfate. (acid potassium sulfate; po-  
tassium hydrogen sulfate; potassium acid sul-  
fate). CAS: 7646-93-7.  $KHSO_4$ .

Properties: Colorless crystals, the fused salt is deli-  
quescent, soluble in water yielding a solution  
with acid reaction, decomposes in alcohol, d  
2.245, mp 195 (decomposes).

Derivation: Heating potassium sulfate with sul-  
furic acid.

Use: Conversion of wine lees and tartrates into  
potassium bitartrate, flux, manufacture of mixed  
fertilizers, methyl acetate, ethyl acetate, lab reagent.

potassium bisulfide. See potassium hydrosulfide.